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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,207	12/26/2001	Ronald A. Greinke	P-1051	1398

7590 12/01/2003

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EXAMINER

BOSS, WENDY L

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,207

Applicant(s)

GREINKE ET AL.

Examiner

Wendy Boss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-21,28,32-34 and 38-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-21,28,32-34,48 and 49 is/are allowed.
- 6) ☒ Claim(s) 10,11,13,15-17,38,39,41 and 43-47 is/are rejected.
- 7) ☒ Claim(s) 12,14,40 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10, 11, 13, 15-17, 38, 39, 41 and 43-47 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,616,999 (Freuler et al.).

Freuler discloses a heat source having an external surface; a thermal interface which comprises a graphite sheet article that contains oil, the thermal interface being in operative communication with the external surface of the heat source; and a heat dissipating component having a heat collection surface and a heat dissipation surface, the heat collection surface being in operative communication with the thermal interface; wherein arranging the heat collection surface in operative connection with the thermal interface causes dissipation of heat from the heat source (see column 3, lines 1-14; column 6, lines 43-54; and Figure 1). At column 6, lines 52-54 Freuler also discloses that the oil may be vegetable oil. Figure 1 of the reference shows that the planar area of the thermal interface is greater than the area of the external surface of the heat source. The reference also discloses that the thermal interface material comprises a 0.051 mm thick metal foil sandwiched between two graphite sheet layers 0.017 mm thick, which would

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result in the thermal interface material having a total thickness of 0.085 mm, which is within the range recited in claim 17.

The reference does not specifically state that the graphite sheet article is flexible; however, at column 3, lines 29-52 it is disclosed that adhesive strips are provided on the edges of the sheet in order to secure the interface to the electronic component. In order to bring the adhesive in contact with the electronic component, the edges would have to be wrapped or folded down. This suggests that the thermal interface material is flexible. Freuler also does not necessarily disclose that the flexible graphite sheet is formed by compressing exfoliated particles of natural graphite; however, patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113).

Allowable Subject Matter

3. Claims 18-21, 28, 32-34, 48 and 49 are allowed.
4. Claims 12, 14, 40 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not disclose a thermal management system or a method comprising a heat source; a thermal interface which comprises an anisotropic flexible graphite sheet that contains oil being in operative communication with the heat source; and a heat dissipating component having a heat collection surface and heat dissipation surface. A thermal management system comprising

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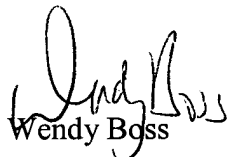
a flexible graphite sheet and mineral oil also is not disclosed or suggested in the prior art of record.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wendy Boss whose telephone number is 703-306-5922. The examiner can normally be reached on M-Th 8:30a-6:00p; 2nd F 8:30a-5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Wendy Boss